Teddington Direct River Abstraction

Statutory Consultation

Draft Overarching Design Principles

Date: June 2025

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1. Introduction

1.1 Purpose of this document

1.1.1 This document has been created for the purposes of Thames Water's Teddington Direct River Abstraction (TDRA) project ('the Project') statutory consultation. It sets out our Design Vision and draft overarching Design Principles, how they have been developed to date, and how we intend to take them forward.

1.1.2 We are consulting on the draft overarching Design Principles during the statutory consultation. The feedback provided will help inform our Project's development, including our Design Principles.

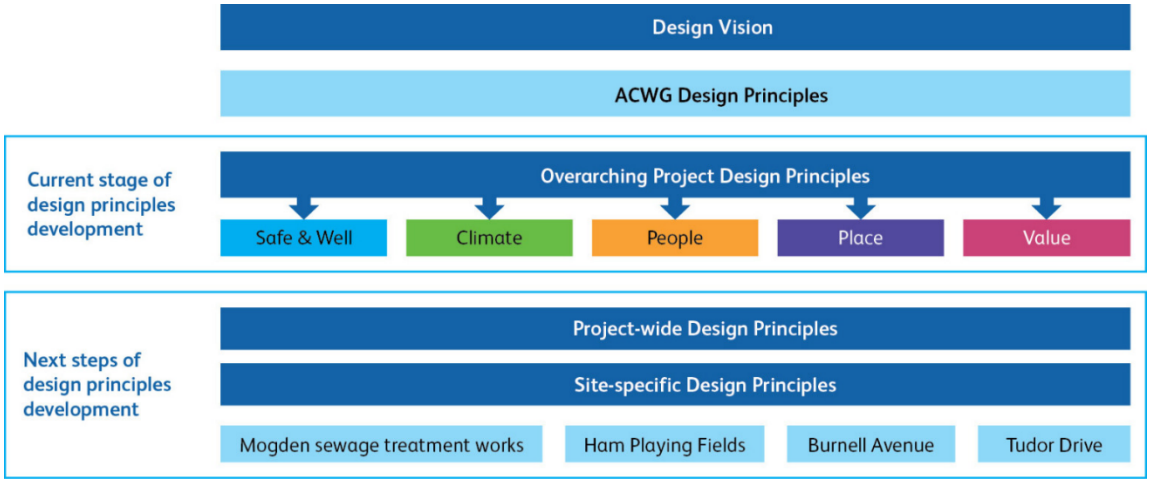
1.1.3 Our Design Vision is a concise statement which encapsulates our ambitions for the Project. It underpins all elements of the design by setting the Project's clear role and purpose. More detail is set out in Section 2.

1.1.4 We have developed 12 draft overarching Design Principles across five themes: Safe and Well, Climate, People, Place and Value. Our draft overarching Design Principles set our design ethos and will be used to help develop more specific Project-wide and Site-specific principles as the design progresses. Our draft overarching Design Principles have supported the Project's development to date.

1.1.5 Our Development Consent Order (DCO) application will be based on a design with appropriate flexibility within the maximum parameters (these are set out in the Preliminary Environmental Information Report Chapter 2: Project Description). This will provide opportunities for further refinement with the contractors who will develop the detailed design and build the Project. Flexibility will also allow for the refinement of elements of the Project as it progresses, for example, in consultation with our stakeholders, agreed through the discharge of DCO requirements and in response to unforeseen design challenges which come to light during this detailed design stage. The submission will include a Design Principles document that will establish the design commitments that will be adhered to and developed in the final design that is developed post DCO consent and delivered by our appointed contractor. The document will be forward-looking and include our overarching Design Principles, and underneath those, both our 'Project-wide Design Principles' (applicable across the Project) and our 'Site-specific Design Principles' setting out commitments relating to specific component parts of the Project reflective of their nature and location.

1.1.6 The Project-wide and Site-specific Design Principles will be the commitments against which the final design will be held. The development process of the Design Principles is shown in Figure 1.1.

Figure 1.1 Development of the draft Design Principles to date and next steps



1.1.7 We anticipate that the final Project-wide and Site-specific Design Principles will serve a number of functions:

a. They will embody the approach taken by the Project to incorporate into its design controls relevant criteria for good design set out in the following documents:

i. National Infrastructure Commission (NIC) – Design Principles for National Infrastructure (February 2020). An updated version titled Project Level Design Principles – Guidance from the National Infrastructure Commission Design Group was published in May 2024

ii. HM Treasury – National Infrastructure Strategy: Fairer, faster, greener (November 2020)

iii. Department for Environment, Food and Rural Affairs – National Policy Statement (NPS) for Water Resources Infrastructure (April 2023)

iv. All Company Working Group (ACWG) – Water Resources: Design Principles & User Guidance (March 2023)

v. Ministry of Housing, Communities and Local Government – Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects (April 2024)

vi. Planning Inspectorate – Nationally Significant Infrastructure Projects: Advice on Good Design (October 2024)

b. They will reflect the feedback we have received and considered during engagement and consultation throughout the design development phase.

c. They will establish the core design control mechanisms that our appointed contractors must adhere to in order to satisfy the Requirements (i.e. conditions) that will be attached to the DCO.

d. They will demonstrate how sustainability objectives will be implemented in Project design.

1.1.8 The draft overarching Design Principles contained in this document relate to design development for our Project and apply within the draft Order limits of the Project, unless explicitly stated otherwise. In general, construction mitigation will

be covered in the Code of Construction Practice that will form part of our DCO application. A draft Code of Construction Practice has been prepared for our statutory consultation and is one of the documents we are also seeking feedback on from those with an interest in the Project. You can find this document by accessing it on our dedicated consultation website: www.thames-sro.co.uk/tdra/statcon2025.

2. Design Vision

2.1.1 Our Design Vision sets the strategic direction of our Project's design development as we work towards the DCO application. It captures our ambitions for the Project, creates a framework for our Design Principles and helps our communities and stakeholders to understand the aims of the Project. Our Design Vision leads the strategic direction of our Design Principles and it has helped us to maximise opportunities within site layout, landscaping, landform and the integration of biodiversity and conservation interests within the design whilst ensuring safety and function.

Project Design Vision

The Project aims to create a sustainable approach to water resilience for customers in London. It will address London's supply challenges by providing a new resilient source of water when it's most needed. It will protect and enhance the environment by protecting the health of the River Thames and will leave a positive legacy through enhancements to the local environment.

2.1.2 Our Design Vision outlines our Project's unique opportunity to create a lasting positive legacy, both in terms of water security, and environmental protection and enhancement, during construction and when the Project is complete.

2.1.3 During the design development of the Project, we will continue to review whether the Vision continues to serve its purpose and expresses what we want the Project to achieve.

3. ACWG design principles

3.1.1 Design principles are a means to set out a unified approach to design and give clarity to stakeholders on design intent, objectives and required outcomes, whilst still providing flexibility for the detailed design to be developed. Although they have historically been used on major projects, in 2020 the NIC issued guidance on the use of design principles for National Infrastructure projects around the four themes of Climate, People, Places and Value.

3.1.2 The guidance states that 'these principles should guide the projects which will upgrade and renew the UK's infrastructure system. They should be applied to all economic infrastructure: digital communications, energy, transport, flood management, water and waste'. The use of design principles such as these is supported by Section 3.6 of the NPS for Water Resources Infrastructure.

3.1.3 The ACWG is a group of water companies that meets regularly. It was set up to ensure that water companies who are progressing Strategic Resource Options (SROs) are adopting a consistent approach to water infrastructure projects where possible, including design.

3.1.4 In 2023, the ACWG issued guidance to water companies on how they expect design principles to be applied to SRO projects. The ACWG guidance builds on the NIC design principles outlined above and reinforces the importance of good design, including principles associated strongly with landscape and environmental value.

3.1.5 The ACWG guidance advises SRO projects to develop design principles around the following themes:

e. 'Be Specific – Develop project-specific design vision and principles based on an understanding of the objectives of each location and the people and places it will affect.'

f. 'Safe and Well – Actively and collectively develop designs that can be built, used and maintained without unacceptable risks to the health and safety of workers – particularly during hazardous construction and operational activity. Manage risks to members of the public thoughtfully with an approach that balances maximising wellbeing benefits with protection from risks that could cause significant harm.'

g. 'Climate – Mitigate greenhouse gas emissions and adapt to climate change'

h. 'People – Reflect what society wants and share benefits widely'

i. 'Place – Provide a sense of identity and improve our environment'

j. 'Value – Achieve multiple benefits and solve problems well'

3.1.6 More information about how the ACWG design principles have informed the Project design is included in Section 3.

3.1.7 The full list of ACWG design principles is presented in Table 3.1.

Table 3.1 ACWG design principles (Source: ACWG[1])

ACWG Ref.	Theme	Principle
1	Be Specific	Develop project-specific design vision and principles based on an understanding of the objectives of each project and the people and places it will affect.
2	Safe and Well	Actively and collectively develop designs that can be built, used and maintained without unacceptable risks to the health and safety of workers – particularly during hazardous construction and operational activity. Manage risks to members of the public thoughtfully with an approach that balances maximising wellbeing benefits with protection from risks that could cause significant harm.
3A	Climate	Nature knows no boundaries: Water is essential to all life and managing our response to climate change is a collective and urgent activity. Projects must be developed to work across companies and/or legislative boundaries to develop sustainable solutions and environmental enhancement for the wider benefit of society.
3B	Climate	Resource and carbon efficient throughout: Projects shall seek to reuse existing assets, eliminate waste (including waste of water) and make efficient use of materials and transport across the whole of the project lifecycle.
3C	Climate	Resilient and adaptable: Design for anticipated future demand at the appropriate scale. Build in the resilience to absorb and recover from the impacts of the extreme events and incremental stresses likely to arise from climate change.
4A	People	Understand and respond to your community's needs: Develop a full understanding of the social context that will be impacted by the project over its lifecycle. Design for how local communities will encounter the infrastructure in their everyday lives during both construction and operation.
4B	People	Engage widely, early and meaningfully: Work with stakeholders and local communities to develop their understanding of the importance of nature and water conservation. Develop co-design approaches to aspects of the design of infrastructure and associated landscape where practicable.
4C	People	Improve access and inclusion: Consider how people move around your works. Maximise opportunities to support active travel and improve recreational access to waterside and green spaces that can improve outcomes for wellbeing, health, local economy, social inclusion and education.

[1] wrse.org.uk/media/cumkcxyg/acwg-design-principles-methodology-document.pdf

ACWG Ref.	Theme	Principle
5A	Place	Take care: Develop proposals in the spirit of stewardship looking to both the past and future of each context to understand and develop its landscape, cultural heritage, health and sustainability. Work with partners to secure the long-term success of all measures.
5B	Place	Protect and promote the recovery of nature: Focus on the role of landscape, its capacity to accommodate infrastructure and shape places. Work collaboratively and employ holistic, landscape-scale approaches that support and deliver biodiversity net gain as well as multiple other benefits.
5C	Place	Design all features beautifully, with honesty and creativity: Our utility infrastructure can be a source of pride and a positive contribution to its context. Develop proposals that reveal and celebrate its importance, provide visual delight and leave a positive legacy.
6A	Value	Maximise embedded value: Work collaboratively across specialisms and with stakeholders to maximise the benefits of the scheme by being smart with the location and arrangement of elements and design of mitigation within the project scope and budget.
6B	Value	Understand how you could provide additional value: Identify opportunities to contribute wider regional benefits outside of the project scope. In particular look for synergies with relevant catchment management plans and proposals that support the delivery and enjoyment of a healthy water environment.
6C	Value	Capture and measure embedded and additional value: Have clear narratives about how you are contributing to society beyond the core scope of your project. Quantify these benefits so they can be considered meaningfully in conversations on value, financing and risk. Share your experience and knowledge widely.

4. Development of the draft overarching Design Principles for the Project

4.1.1 Our Project's concept design has been developed and refined over several years.

4.1.2 The Project began with initial site optioneering, identifying preferred infrastructure locations and testing. This work was linked with the development of Thames Water's Water Resource Management Plan 2024 (WRMP24). The WRMP24 was approved on 4 September 2024 by the Secretary of State (SoS) for Environment, Food and Rural Affairs. On reaching the decision to approve Thames Water's plan, the SoS concluded that there is a strategic need for the major projects in the WRMP including the Project.

4.1.3 In 2023, we consulted our communities and stakeholders on site options for our Project, and the feedback received has helped to inform the design.

4.1.4 We've also appointed a Design Champion and an independent Design Panel to review our progress and ensure we maximise design opportunities as we progress towards our DCO submission. The Design Champion will be accountable for delivering coherent good design that drives value across the Project and promotes the Project Design Principles throughout the detailed design and delivery phases of the Project.

4.1.5 A full timeline of the Project's history to date, including the consultation and engagement undertaken, can be found on Page 13 of our Statutory Consultation Brochure, which can be found on our consultation website at thames-sro.co.uk/TDRA/statcon2025.

4.1.6 The design we are presenting at our statutory consultation embeds 'good design' principles and is in accordance with the ACWG publication on Design Principles as set out in Section 3. A multi-disciplinary approach has been adopted involving technical specialists from across the Project team.

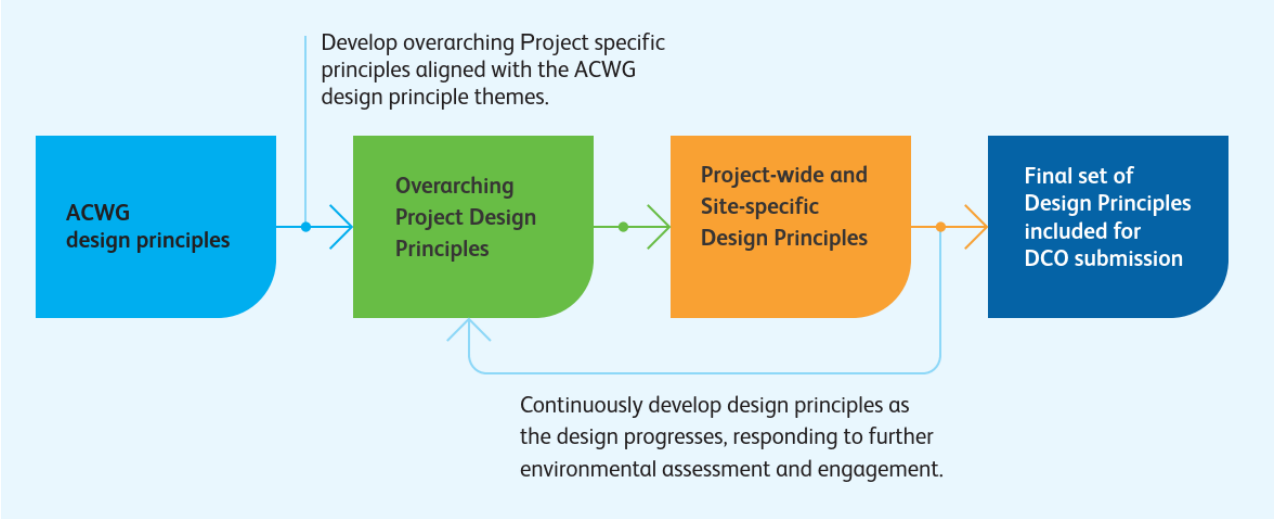
4.1.7 Through collaboration, 12 draft overarching Design Principles that align with the ACWG themes have been established for the Project. These draft overarching Design Principles are high-level and thematic and have been developed to guide the design of the Project. As such, the principles are aspirational and forward-looking, using terms such as 'seeks to ensure' and 'where reasonably practicable'.

4.1.8 These overarching Design Principles will help to develop Project-wide and Site-specific Design Principles. Project-wide principles will apply to the whole Project, and Site-specific principles will be developed for the four main geographical areas of the Project as shown in Figure 1.1.

4.1.9 Our draft overarching Design Principles will continue to be developed in response to further environmental assessment and design development. As part of this process, additional Design Principles may be introduced as the

design progresses to make sure all aspects of the design are comprehensively covered. Figure 4.1 shows this iterative process.

Figure 4.1 Iterative process of design principles development



5. Draft Overarching Design Principles

5.1.1 Each of our draft overarching Design Principles includes a title, a summary headline and a description of the principle and its purpose. Our draft overarching Design Principles apply within the context of the draft Order limits of the Project, unless explicitly stated otherwise.

5.2 Safe and Well

5.2.1 Safety is at the heart of everything Thames Water does. These principles set out how we want the Project to be designed, delivered, operated and used to ensure people are kept safe.

Draft Design Principle 1: Protect the public

Actively manage the health, safety and wellbeing of the public

5.2.2 Ensure that all new infrastructure introduced to the public realm is designed with public safety and security in mind and considers the risks and benefits for recreational users. Design out health and safety hazards to enable safe construction and operational activities.

Draft Design Principle 2: Protect the worker

Provide a safe and healthy environment for our workers

5.2.3 Develop designs for new infrastructure that can be built, used and maintained without unacceptable risks to the health, safety and wellbeing of workers, as well as providing a safe and healthy environment. Provide operational infrastructure and site facilities designed to comply with operational health and safety standards, considering innovations, technology and digital tools.

5.3 Climate

5.3.1 The Project is a key part of our plan to support water supplies in a changing climate.

5.3.2 In delivering the Project, we will integrate sustainable design and construction practices with the aim to protect water resources, deliver resilient infrastructure which is adaptable to climate change, support Thames Water's carbon reduction commitments, use resources efficiently, minimise waste, and enhance the environment.

Draft Design Principle 3: Decarbonise the design

Mitigate greenhouse gas (GHG) emissions across the Project life cycle

5.3.3 Reduce and manage whole life GHG emissions, as far as reasonably practicable, across the life cycle of the Project in line with good industry practice, such as PAS2080. Seek to avoid additional capital carbon emissions

through lean design, incorporating low carbon materials and adopting efficient construction techniques. Seek to avoid additional operational carbon emissions through designing for operational efficiency of the water treatment plant and associated assets. Consider low carbon transport and energy opportunities where practicable. Seek to optimise carbon emissions during the maintenance, refurbishment and replacement stages of the Project.

Draft Design Principle 4: Reduce and reuse materials

Optimise use of materials and minimise waste through efficient design and construction techniques

5.3.4 Adopt a circular economy approach to promote the continual use of resources by designing for durability, adaptability, reuse and recovery across the lifetime of the Project. Reduce material use and specify natural, responsible and recycled materials where reasonably practicable. Seek opportunities to minimise waste through design (for example, modular designs and off-site production) and identify beneficial reuse opportunities for excavated materials.

Draft Design Principle 5: Respond to climate change

Embed resilience to climate change to support long-term function

5.3.5 Build London's resilience to drought by supporting water resources, and seek to mitigate other climate change risks to the Project, such as flooding and rising temperatures. Seek to embed climate resilience into built structures as well as broader landscape elements, informed by the latest climate projections for the United Kingdom (using a high emissions scenario). Design and manage planting and seeding to create habitats that respond to a changing climate and seek to achieve no increase in flooding.

5.4 People

5.4.1 We will engage with local people and stakeholders to understand what is important to the local communities and engage local people in the design of the Project.

Draft Design Principle 6: Engage widely

Engage widely with a range of stakeholders and integrate feedback into the design and operation of the Project

5.4.2 Engage widely, early and meaningfully to hear the views of those with an interest in the Project to develop our understanding of the local area and what is important to local people. We will have regard to feedback in the design of the Project.

Draft Design Principle 7: Connect people with infrastructure

Create meaningful relationships between people and infrastructure through good design

5.4.3 Consider ways to create meaningful relationships between people and infrastructure through good design, exploring opportunities to positively integrate the design into the riverside environment and to allow existing recreational uses to continue where it is safe to do so. This includes potential improvements to local green and blue spaces for leisure and recreation.

5.5 Place

5.5.1 We want to design the public realm elements of the Project to be sensitively integrated into the landscape, mindful of its context, recreational use and proximity to local homes and public spaces.

Draft Design Principle 8: Design sensitively

Design infrastructure sensitively and integrate it with its surroundings

5.5.2 Design infrastructure sensitively and integrate it with its surroundings, strengthening the local qualities of place where practicable, by considering protected views and the natural, hydrological, historic and cultural context for each above ground site. Retain natural and artificial features, such as trees, public rights of way, cycle routes and seating where reasonably practicable to maintain the existing recreational use. Where removal or diversion of such features is unavoidable, reinstate or replace them with a contextually sensitive design.

Draft Design Principle 9: Support nature

Develop a design that supports local nature recovery and ecological connectivity

5.5.3 Develop a design that leaves the natural environment in a measurably better state, contributing to local nature recovery targets and ecological connectivity. Locate infrastructure sensitively and seek to retain and protect sensitive habitats and the resources they provide for locally valuable wildlife species and avoid habitat fragmentation. Contribute towards local nature recovery strategies through habitat enhancement and creation that achieves a biodiversity net gain (BNG) of at least 10%, considering on-site before any local off-site BNG provision.

Draft Design Principle 10: Celebrate the River Thames

Celebrate the River Thames through good design that reflects the local heritage and ecology of the area

5.5.4 Consider ways of celebrating the River Thames through good design, integrating the intake and outfall infrastructure into the riverside landscape and drawing upon the rich history of the local area. Protect the qualities and ecology

of the river corridor, contributing to and improving the riverside woodlands and tree belts.

5.6 Value

5.6.1 Promoters of projects of national significance like ours are encouraged to look for opportunities to maximise the value of major infrastructure investment to wider society. This includes looking for opportunities to work together with other major projects to reduce overall impact and delivering a project that has lasting positive benefit to communities and the environment.

Draft Design Principle 11: Collaborate with local projects

Collaborate with local projects to contribute to wider benefits and mitigate cumulative impacts

5.6.2 Seek to collaborate with local construction projects to deliver localised value and contribute towards wider regional benefits. Explore opportunities to identify synergies which support Project delivery whilst mitigating adverse impacts. Consider the potential effects of Project decisions on other local projects and mitigate cumulative impacts on communities to support balanced and sustainable development.

Draft Design Principle 12: Work with local communities

Work with local communities to create environmental, social and economic opportunities

5.6.3 Achieve the creation of environmental, social and economic opportunities to drive value through working together with local stakeholder groups to deliver initiatives which are ‘with’ and ‘for’ communities. Focus on initiatives which have the capacity to generate real value through delivery of common purpose and multidisciplinary outcomes. Realise, understand and make decisions from the perspective that ‘value’ must reflect wants and needs of local communities.

6. Have your say

6.1.1 Our Design Vision and draft overarching Design Principles have been published in this document for the purposes of the TDRA statutory consultation. You can find out more about our consultation by visiting the dedicated website at www.thames-sro.co.uk/tdra/statcon2025.

6.1.2 We are asking for your feedback on our draft overarching Design Principles, which you can provide in one of the following ways:

a. Fill in the online Feedback Form, which you can find at the consultation website at www.thames-sro.co.uk/tdra/statcon2025

b. Email our dedicated consultation response email address at **TDRA@ipsos.com**

c. Fill in one of our printed Feedback Forms, which are available from one of our eight public information events, from locations within the community, or by requesting that one is posted to you by the Project team. Completed printed Feedback Forms may be posted free of charge to **FREEPOST TDRA CONSULTATION**. Pre-printed envelopes with the Freepost address are available where there are printed Feedback Forms. No stamp is needed.

d. Write to us free of charge at **FREEPOST TDRA CONSULTATION**

6.1.3 All responses must be received in writing by 11.59pm on Tuesday 26 August 2025. Responses received after that date may not be considered. We cannot guarantee acceptance of consultation responses submitted via other channels.

6.1.4 Any personal information submitted to us during statutory consultation will be processed in line with our privacy policy, which can be viewed at www.thameswater.co.uk/legal/privacy-notice.